*(For students admitted in 2017-18 under the 4-year degree)*

# BSc in Computer Science

This program of study is designed for students who wish to pursue their study in computer science but wish to graduate with additional major(s). Students enrolling in the program as their first major are expected to simultaneously declare study in an additional major. Alternatively, students who are already enrolled in a different first major may declare this program as an additional major.

To enroll in this program (whether as first major or additional major), students are expected to have a CGA of 3.7 or above and have a feasible study plan to complete all the requirements for the degree and additional major(s) concerned within the normal duration of study. Applicants with lower qualifications are also encouraged to apply and will be considered on an individual basis.

In addition to the requirements of their major programs, students are required to complete the University requirements for graduation. For details please refer to the respective section on this website.

Some courses can be used to fulfill both Major and University Common Core Requirements. Students may reuse a maximum of 6 credits of these courses to count towards both Requirements.

Students may use no more than 6 credits earned from courses offered in pure online delivery mode to satisfy the graduation requirements of a degree program. This 6-credit limit does not apply to credits obtained through the credit transfer procedures of the University.

For students graduating with an additional major, they must take all the requirements specified for that major, within which they must complete at least 20 single-counted credits. These 20 credits cannot be used to fulfill any other requirements for graduation except for the 120-credit degree requirement.

## *Major Requirements*

### Engineering Fundamental Course(s)

| | | | Credit(s) attained |
|---|---|---|---|
| COMP | | Note: COMP 1021 OR COMP 1022P OR COMP 1022Q | 3 |
| COMP | 1021 | Introduction to Computer Science | 3 |
| COMP | 1022P | Introduction to Computing with Java | 3 |
| COMP | 1022Q | Introduction to Computing with Excel VBA | 3 |
| ENGG | 1010 | Academic Orientation | 0 |
| LANG | 2030 | Technical Communication I | 3 |
| MATH | | Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] | 4-7 |
| MATH | 1012 | Calculus IA | 4 |
| MATH | 1013 | Calculus IB | 3 |
| MATH | 1014 | Calculus II | 3 |
| MATH | 1020 | Accelerated Calculus | 4 |
| MATH | 1023 | Honors Calculus I | 3 |
| MATH | 1024 | Honors Calculus II | 3 |
| MATH | | Note: MATH 2111 OR MATH 2121 OR MATH 2131 | 3-4 |
| MATH | 2111 | Matrix Algebra and Applications | 3 |

| | | | |
|---|---|---|---|
| MATH | 2121 | Linear Algebra | 4 |
| MATH | 2131 | Honors in Linear and Abstract Algebra I | 4 |

## Required Course(s)

| | | | Credit(s) attained |
|---|---|---|---|
| COMP | | Note: (COMP 2011 AND COMP 2012) OR COMP 2012H | 5-8 |
| COMP | 2011 | Programming with C++ | 4 |
| COMP | 2012 | Object-Oriented Programming and Data Structures | 4 |
| COMP | 2012H | Honors Object-Oriented Programming and Data Structures | 5 |
| COMP | 2611 | Computer Organization | 4 |
| COMP | | Note: COMP 2711 OR COMP 2711H | 4 |
| COMP | 2711 | Discrete Mathematical Tools for Computer Science | 4 |
| COMP | 2711H | Honors Discrete Mathematical Tools for Computer Science | 4 |
| COMP | | Note: COMP 3111 OR COMP 3111H | 4 |
| COMP | 3111 | Software Engineering | 4 |
| COMP | 3111H | Honors Software Engineering | 4 |
| COMP | 3511 | Operating Systems | 3 |
| COMP | | Note: COMP 3711 OR COMP 3711H | 3-4 |
| COMP | 3711 | Design and Analysis of Algorithms | 3 |
| COMP | 3711H | Honors Design and Analysis of Algorithms | 4 |
| COMP | | Note: Students are required to take COMP 4900 for every regular term in which they are in residency at HKUST with major in COSC | 0 |
| COMP | 4900 | Academic and Professional Development | 0 |
| ELEC/IEDA/ MATH | | Note: ELEC 2600 OR IEDA 2510 OR MATH 2411 OR MATH 2421 OR MATH 2431 | 4 |
| ELEC | 2600 | Probability and Random Processes in Engineering | 4 |
| IEDA | 2510 | Engineering Probability and Statistics | 4 |
| MATH | 2411 | Applied Statistics | 4 |
| MATH | 2421 | Probability | 4 |
| MATH | 2431 | Honors Probability | 4 |
| LANG | 4030 | Technical Communication II for CSE & CPEG | 3 |

## Elective(s)

| | | Minimum credit(s) required |
|---|---|---|
| COMP | COMP 2000-level or above Electives [Any 6 courses of the subject and level as specified. For students who have taken the 6-credit course COMP 4981 or COMP 4981H to fulfill this elective requirement, the minimum number of courses required to satisfy this requirement may be reduced by one. With approval by the Dean or the Dean's designate, students may use up to 3 computer science related courses (9 credits) offered by non-CSE department(s) to count towards this requirement.] | 18 |